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10/567,768	02/10/2006	Heon-Chan Kang	MAC-11036	5326

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MESA, AZ 85201

EXAMINER

KUMAR, KALYANA VENKA K

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3653

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,768	Applicant(s) KANG ET AL.	
	Examiner KALYANA VENKATESHWAR KUMAR	Art Unit 3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/27/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1-34 are objected to because of the following informalities:
2. Regarding claim 1, under 37 CFR 1.75 (i), "Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation.
3. Regarding claim 1, the claim does not clearly point out each step of the method. For example, where the claim states, "in which construction waste crushed to a predetermined size is added to a liquid in a precipitation tank," could be written as follows, "adding construction waste crushed to a predetermined size to a liquid in a precipitation tank."
4. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
6. Claim 11-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
7. Regarding claims 11-15, the claims state, "the specific gravity of each component of the construction waste, which is used for determining the reference specific gravity of

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the liquid, is based on surface-dry density measured in a state where each of the components contained a sufficient amount of water held therein," the claim is unclear. By definition, the specific gravity of a material is the density of the material divided by the density of water, therefore, it is unclear what is meant by the specific gravity of a component being based on surface-dry density measured in a state where each of the components contained a sufficient amount of water held therein.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by

Fiedlschuster et al (USP 6,213,306 B1).

10. Regarding claim 1, Fiedlschuster discloses a method for separation of construction waste, in which construction waste crushed to a predetermined size is added to a liquid in a precipitation tank (see Abstract, step d) and separated into components in the tank according to specific gravity, in which the liquid has a reference specific gravity lower than that of a component to be recovered but higher than that of

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the remaining components, such that only the component to be recovered is separated by precipitation to the bottom of the precipitation tank (see Abstract, step f).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. fClaims 2-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiedlschuster in view of **Jepsen (USP 3,578,162)**, **Olivier (USP 5,373,946)**.

13. Regarding claims 2-5, Fiedlschuster discloses all the limitations of the claims, but Fiedlschuster does not disclose the liquid is obtained by diluting a heavy reagent, which is tetrabromoethane, with a diluent, which is alcohol, to attain a reference specific gravity or the liquid is a suspension obtained by diluting a heavy medium, which medium is selected from the group consisting of magnetite powder, ferrosilicon powder, hematite powder, galena powder and a mixture thereof, in water to have a reference specific gravity. These features, however, are well known in the gravity liquid separation art. Jepsen teaches the use of tetrabromoethane and alcohol as a reagent and diluent for use as a commonly used separation liquid (Jepsen, col. 2, lines 10-20). Olivier teaches the use of water and heavy medium, ferrosilicon, for use in gravity liquid separation (Olivier, col. 7, lines 29-49). Moreover, it would be obvious to one with ordinary skill in the art to modify the base reference with these prior art teachings to

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arrive at the claimed invention. The rationale for this obviousness determination can be found in the use of prior art elements according to their functions is a predictable variation that would yield predictable results, and thus cannot be regarded as a non-obvious modification when the modification is already commonly implemented in the prior art.

14. Regarding claims 6-10, Fiedlschuster discloses the component to be recovered is recyclable aggregate, and the remaining components are impurities having a specific gravity lower than that of the aggregate (dependent on what fraction is desired, that fraction can be separated out by sink or float method that is dependent on the specific gravity of the material, see claim 1 of the reference).

15. Regarding claims 11-15 as best understood by the Examiner, Fiedlschuster/Jepsen/Olivier discloses all the limitations of the claims, but Fiedlschuster/Jepsen/Olivier do not specifically disclose the specific gravity of each component of the construction waste, which is used for determining the reference specific gravity of the liquid, is based on surface-dry density measured in a state where each of the components contained a sufficient amount of water held therein, however, by definition, the specific gravity of a material is the density of the material divided by the density of water, and, therefore, the specific gravity of the components would be calculated by this process.

16. Regarding claims 16-20, Fiedlschuster/Jepsen/Olivier discloses the reference specific gravity of the liquid is in a range of 2.35-2.5 (Jepsen, col. 2, lines 15-20) (Olivier, col. 7, lines 44-46) (see MPEP 2144.05).

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17. Regarding claims 21-25, Fiedlschuster discloses each component of the construction waste, which is added to the liquid in the precipitation tank, has been crushed to a size of 10-50 mm (col. 5, lines 49-50).

18. Claims 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiedlschuster/Jepsen/Olivier in further view of **Smith et al (USP 4,265,737)**.

19. Regarding claims 26-32, Fiedlschuster/Jepsen/Olivier discloses all the limitations of the claims, but Fiedlschuster/Jepsen/Olivier does not disclose a step of stirring the precipitation tank such that the liquid is maintained at a uniform specific gravity or measuring the specific gravity of the liquid in the precipitation tank; and adding the medium into the precipitation tank if the measured specific gravity is lower than the reference specific gravity, or adding water into the tank if the measured specific gravity is higher than the reference specific gravity. Smith teaches a step of stirring the precipitation tank such that the liquid is maintained at a uniform specific gravity (col. 17, lines 1-6, the liquid must be uniform in order to function effectively) or measuring the specific gravity of the liquid in the precipitation tank; and adding the medium into the precipitation tank if the measured specific gravity is lower than the reference specific gravity, or adding water into the tank if the measured specific gravity is higher than the reference specific gravity (col. 26, lines 22-27 and col. 42, lines 10-17, the specific gravity can be altered to a desired ratio through the addition of non-separating material) for the purpose of maintaining or altering the liquid in order to function properly.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Fiedlschuster/Jepsen/Olivier to be capable of

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stirring or mixing the separating liquid, as taught by Smith, for the purpose of maintaining or altering the liquid in order to function properly.

20. Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiedlschuster/Jepsen/Olivier in further view of **Tse (US Pub 2007/0084765 A1)**.

21. Regarding claims 33 and 34, Fiedlschuster/Jepsen/Olivier discloses all the limitations of the claims, but Fiedlschuster/Jepsen/Olivier does not disclose the steps of: stirring the cylindrical precipitation tank by rotation using a driving unit such that the medium dispersed in the tank is maintained as a stable suspension; introducing the construction waste crushed to a predetermined size into the precipitation tank; recovering the component precipitated to the bottom of the precipitation by lifting up the component by means of rotating plates attached to the inner wall of the precipitation tank and allowing the lifted component to fall down into a recovering unit placed at a central portion; and gathering the remaining components floating on the suspension at the central portion by pushing with guide plates and discharging the gathered components from the precipitation tank. Tse teaches the steps of: stirring the cylindrical precipitation tank by rotation using a driving unit such that the medium dispersed in the tank is maintained as a stable suspension (Tse, paragraph 0005); introducing the construction waste crushed to a predetermined size into the precipitation tank (Tse, see Fig. 1, entrance of the system); recovering the component precipitated to the bottom of the precipitation by lifting up the component by means of rotating plates attached to the inner wall of the precipitation tank and allowing the lifted component to fall down into a recovering unit placed at a central portion (Tse, see Fig. 5, element 15); and gathering

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the remaining components floating on the suspension at the central portion by pushing with guide plates and discharging the gathered components from the precipitation tank (Tse, see Fig. 1, elements 170 and 2) for the purpose of separating unwanted material from desired material. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Fiedlschuster/Jepsen/Olivier, as taught by Tse, for the purpose of separating unwanted material from desired material.

Conclusion

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalyan Kumar whose telephone number is 571-272-8102. The examiner can normally be reached on Mon-Fri 7:00AM-3:30PM.

23. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on 571-272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

24. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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